

Dr. Gatha Thacker

Assistant Professor

Department of Health Sciences

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Professional Overview

- Assistant Professor, Department of Health Sciences, Central University of Rajasthan, Bandarsindri, Ajmer, Rajasthan, India. (March 2026- Till date)
- Staff Scientist, The Wistar Institute, Philadelphia, PA, USA (September 2024- February 2026).
- Postdoctoral researcher, The Wistar Institute, Philadelphia, PA, USA (January 2023- September 2024).
Project: Generating melanoma antigen-specific immune responses using induced pluripotent (iPS) cells to advance immunotherapy in melanoma.
- Postdoctoral research associate, Department of Surgery, Miller School of Medicine, University of Miami, Miami, FL, USA. (January 2022-December 2022).
Project: Understanding paradoxical role of natural killer cells in the tumor microenvironment of triple negative breast cancer.
- Postdoctoral fellow, Department of Biomedical Sciences, School of Veterinary medicine, University of Pennsylvania, Philadelphia, PA (September 2019-December 2021).
Project: Elucidating the role of tumor microenvironment in triple negative breast cancer progression and metastasis.
- Ph.D., Biochemistry Division, CSIR-Central Drug Research Institute, Lucknow (2014-2019)
Thesis title: 'Probing role of E3 ubiquitin ligases in osteogenesis.
- Assistant Professor (ad-hoc), Department of Biotechnology, Guru Ghasidas Central University, Bilaspur (2012)
- M.Sc. in Marine Biotechnology, Center of Advanced Studies in Marine Biology, Annamalai University, Tamil Nadu (2009-2011) (Dissertation: 'Attenuation of Proliferative Potential of Breast Cancer Cell Lines by Brown Alga, *Stoechospermum marginatum*')
- B.Sc. in Biotechnology, Chemistry, Zoology as major subjects, Dr. Hari Singh Gour University, Sagar (2006-2009).

Research Interest

I am keen to understand the molecular mechanisms driving initiation, progression, and metastasis of various cancers. With my past and present experience in studying heterogeneity of tumor microenvironment, immune responses, immune cell cross talk and

aberrant signaling pathway, my goal is to develop a molecular understanding that will aid development of better diagnostic marker or therapeutic strategy to life threatening diseases such as cancer.

Publications [21 = 20 manuscript (5 First-authored + 15 Co-authored) + 1 Book chapter]

<https://www.ncbi.nlm.nih.gov/myncbi/gatha.thacker.1/bibliography/public/>

- Panneer Selvam C, **Thacker G**, Kim U, Tjendra Y, Boone MM, Henry S, Dos Santos CO, Chakrabarti R. KRT17 promotes triple negative breast cancer through activation of Wnt signaling and $\gamma\delta$ T-cells recruitment. *Communications Biology*, 2026 Mar 26;. doi: 10.1038/s42003-026-09897-0. [Epub ahead of print] PubMed PMID: 41888575.
- Li H, Chen Y, Kaster J, Dunne M, Xiao M, Li L, Thomas M, Promi N, Fingerman D, Brown GS, Zheng Q, Zhu X, Reale M, Patterson A, Gao L, Zhang X, Jiang S, Hu T, Fang H, Ren J, Qi C, Wang L, Mou H, **Thacker G**, Salazar ER, Villanueva J, Raj A, Hoon DS, Bin T, Madzo J, Wei Z, Auslander N, Herlyn M. Clonal dynamics shaped by diverse drug-tolerant persister states in melanoma resistance. *Molecular Cancer*. 2026 Mar 3;. doi: 10.1186/s12943-026-02622-9. [Epub ahead of print] PubMed PMID: 41776501.
- Singh AK, **Thacker G**, Upadhyay V, Mishra M, Sharma A, Sethi A, Chowdhury S, Siddiqui S, Verma SP, Pandey A, Bhatt MLB, Trivedi AK. Nemo-like kinase blocks myeloid differentiation by targeting tumor suppressor C/EBP α in AML. *FEBS J*. 2024 Aug 7;. doi: 10.1111/febs.17245. [Epub ahead of print] PubMed PMID: 39110129.
- Mishra M, Singh AK, **Thacker G**, Upadhyay V, Sanyal S, Trivedi AK. Ormeloxifene, a nonsteroidal antifertility drug promotes megakaryocyte differentiation in leukemia cell line K562. *Cell Biol Int*. 2023 Jul;47(7):1247-1258. doi: 10.1002/cbin.12017. Epub 2023 Mar 23. PubMed PMID: 36950830.
- **Thacker G**, Henry S, Nandi A, Debnath R, Singh S, Nayak A, Susnik B, Boone MM, Zhang Q, Kesmodel SB, Gumber S, Das GM, Kambayashi T, Dos Santos CO, Chakrabarti R. Immature natural killer cells promote progression of triple-negative breast cancer. *Science Translational Medicine*. 2023 Mar 8;15(686):eabl4414. doi: 10.1126/scitranslmed.abl4414. Epub 2023 Mar 8. PubMed PMID: 36888695.
- Nandi A, Debnath R, Nayak A, To TKJ, **Thacker G**, Reilly M, Gumber S, Karagounis I, Li N, Lengner CJ, Haldar M, Welm AL, Blanco MA, Thomas C, Chakrabarti R. Dll1-mediated Notch signaling drives tumor cell crosstalk with cancer associated fibroblasts to promote radioresistance in breast cancer. *Cancer Research*. 2022 Aug 24;. doi: 10.1158/0008-5472.CAN-21-1225. [Epub ahead of print] PubMed PMID: 36007109.
- Sharma A, **Thacker G**, Mishra M, Singh AK, Upadhyay V, Sanyal S, Trivedi AK. SOX4-mediated FBW7 transcriptional upregulation confers Tamoxifen resistance in ER+ breast cancers via GATA3 downregulation. *Life Sci*. 2022 Aug 15;303:120682. doi: 10.1016/j.lfs.2022.120682. Epub 2022 Jun 2. PubMed PMID: 35662647.
- **Thacker G**, Mishra M, Sharma A, Singh AK, Sanyal S, Trivedi AK. CDK2-instigates C/EBP α degradation through SKP2 in Acute myeloid leukemia. *Med Oncol*. 2021 May 17;38(6):69. doi: 10.1007/s12032-021-01523-9. PubMed PMID: 34002296.

- Sharma A, Upadhyay V, Sarkar M, Mishra M, **Thacker G**, Trivedi AK. Proteomic analysis of TGF β -induced A549 secretome identifies putative regulators of epithelial-mesenchymal transition. *Biotechnol Appl Biochem.* **2021** Feb 9. doi: 10.1002/bab.2121. PubMed PMID: 33559923.
- Mishra M, **Thacker G**, Sharma A, Singh AK, Upadhyay V, Sanyal S, Verma SP, Tripathi AK, Bhatt MLB, Trivedi AK. FBW7 Inhibits Myeloid Differentiation in Acute Myeloid Leukemia via GSK3-Dependent Ubiquitination of PU.1. *Mol Cancer Res.* **2021** Feb;19(2):261-273. doi: 10.1158/1541-7786.MCR-20-0268. Epub 2020 Nov 13. PubMed PMID: 33188146.
- Sharma A, Mishra T, **Thacker G**, Mishra M, Narender T, Trivedi AK. Chebulinic acid inhibits MDA-MB-231 breast cancer metastasis and promotes cell death through down regulation of SOD1 and induction of autophagy. *Cell Biol Int.* **2020** Dec;44(12):2553-2569. doi: 10.1002/cbin.11463. Epub 2020 Sep 16. PubMed PMID: 32902904.
- **Thacker G**, Mishra M, Sharma A, Singh AK, Sanyal S, Trivedi AK. E3 ligase SCFSKP2 ubiquitinates and degrades tumor suppressor C/EBP α in acute myeloid leukemia. *Life Sci.* **2020** Sep 15;257:118041. doi: 10.1016/j.lfs.2020.118041. Epub 2020 Jul 2. PubMed PMID: 32622945.
- Singh S, Kumar S, Srivastava RK, Nandi A, **Thacker G**, Murali H, Kim S, Baldeon M, Tobias J, Blanco MA, Saffie R, Zaidi MR, Sinha S, Busino L, Fuchs SY, Chakrabarti R. Loss of ELF5-FBXW7 stabilizes IFNGR1 to promote the growth and metastasis of triple-negative breast cancer through interferon- γ signalling. *Nature Cell Biology.* **2020** May;22(5):591-602. doi: 10.1038/s41556-020-0495-y. Epub 2020 Apr 13. PubMed PMID: 32284542; PubMed Central PMCID: PMC8237104.
- **Thacker G**, Mishra M, Sharma A, Singh AK, Sanyal S, Trivedi AK. CDK2 destabilizes tumor suppressor C/EBP α expression through ubiquitin-mediated proteasome degradation in acute myeloid leukemia. *J Cell Biochem.* **2020** Apr;121(4):2839-2850. doi: 10.1002/jcb.29516. Epub 2019 Nov 6. PubMed PMID: 31692040.
- **Thacker G**. Recent Proteomics Development for Biomarker Detection in Breast Cancer. In: Suman S, Suman G, Mishra S, editors. Current Advances in Breast Cancer Research: A Molecular Approach [Internet] Sharjah, United Arab Emirates: **Bentham books; 2020**. Chapter 4; p.104-122 (19). Available from: <https://benthambooks.com/book/9789811451447/>.
- Mishra M, Sharma A, **Thacker G**, Trivedi AK. Nano-LC based proteomic approach identifies that E6AP interacts with ENO1 and targets it for degradation in breast cancer cells. *IUBMB Life.* **2019** Dec;71(12):1896-1905. doi: 10.1002/iub.2132. Epub 2019 Jul 22. PubMed PMID: 31329371.
- Kumar Y, Biswas T, **Thacker G**, Kanaujiya JK, Kumar S, Shukla A, Khan K, Sanyal S, Chattopadhyay N, Bandyopadhyay A, Trivedi AK. BMP signaling-driven osteogenesis is critically dependent on Prdx-1 expression-mediated maintenance of chondrocyte prehypertrophy. *Free Radic Biol Med.* **2018** Apr;118:1-12. doi: 10.1016/j.freeradbiomed.2018.02.016. Epub 2018 Feb 13. PubMed PMID: 29452246.
- Chhabra S, Mishra T, Kumar Y, **Thacker G**, Kanoujiya S, Chattopadhyay N, Narender T, Trivedi AK. Chebulinic Acid Isolated From the Fruits of Terminalia chebula Specifically Induces Apoptosis in Acute Myeloid Leukemia Cells. *Phytother Res.* **2017**

Dec;31(12):1849-1857. doi: 10.1002/ptr.5927. Epub 2017 Sep 18. PubMed PMID: 28921713.

- Chhabra S, Kumar Y, **Thacker G**, Kapoor I, Lochab S, Sanyal S, Bhatt MLB, Chattopadhyay N, Trivedi AK. E6AP inhibits G-CSFR turnover and functions by promoting its ubiquitin-dependent proteasome degradation. *Biochim Biophys Acta Mol Cell Res.* **2017** Oct;1864(10):1545-1553. doi: 10.1016/j.bbamcr.2017.05.026. Epub 2017 Jun 1. PubMed PMID: 28578910.
- Kumar Y, Shukla N, **Thacker G**, Kapoor I, Lochab S, Bhatt ML, Chattopadhyay N, Sanyal S, Trivedi AK. Ubiquitin Ligase, Fbw7, Targets CDX2 for Degradation via Two Phosphodegron Motifs in a GSK3 β -Dependent Manner. *Mol Cancer Res.* **2016** Nov;14(11):1097-1109. doi: 10.1158/1541-7786.MCR-16-0138. Epub 2016 Jul 28. PubMed PMID: 27470268.
- **Thacker G**, Kumar Y, Khan MP, Shukla N, Kapoor I, Kanaujiya JK, Lochab S, Ahmed S, Sanyal S, Chattopadhyay N, Trivedi AK. Skp2 inhibits osteogenesis by promoting ubiquitin-proteasome degradation of Runx2. *Biochim Biophys Acta.* **2016** Apr;1863(4):510-9. doi: 10.1016/j.bbamcr.2016.01.010. Epub 2016 Jan 14. PubMed PMID: 26778333.

Fellowships and Grants

- 'Basser Early Career Grant Award 2021' from Basser Center for BRCA, grant funding in the amount of \$75,000 covering the period July 1, 2021-June 30, 2022.
- Junior Research Fellowship, awarded by Indian Council of Medical Research (ICMR-JRF), 2013
- Junior Research Fellowship in Life Sciences, conducted by Council of Scientific & Industrial Research (UGC-JRF), 2014
- DST-INSPIRE Fellowship from Department of Science and Technology, Govt. of India 2012
- Graduate Aptitude Test in Engineering (GATE) with 98.96 percentile conducted by Indian Institute of Technology, 2013
- Awarded Post-Graduate scholarship (National Biotechnology Fellowship) during M. Sc. Biotechnology (2009-2011) by Department of Biotechnology (DBT), Ministry of Science and Technology, Govt. of India

Awards and Recognitions

- 'East meets West Award' and travel grant from European Calcified Tissue Society (ECTS) for presenting research work in 45th Annual ECTS Congress-2018 in Valencia, Spain.
- 'Incentive awards for publications 2019' by CSIR-Central Drug Research Institute, Lucknow for publication.
- National Eligibility Test (NET) in Life Sciences, conducted by Council of Scientific & Industrial Research (CSIR), 2011
- Prof. V. Balaiah Prize for securing the highest marks among all the science branches in the M.Sc. degree examination, 2011
- Tmt. Sigappi Achi Prize for securing 1st rank in M.Sc. Marine Biotechnology degree examination by CAS in Marine Biology, 2011

- Consolation in Microtech-2008, Junior Scientist Award by Society for Basic and Applied Mycology (SBAM)
- National Level Biotechnology Talent Search Examination-2011 (online), organized by Biotech Helpline Foundation
- Certificate of merit for securing 1st rank at district level in High School Certificate Examination by Akhil Bhartiya Vidyarthi Parishad, 2003

Professional Memberships

2018-2019	European Calcified Tissue Society (ECTS)
2022-Now	American Association for Cancer Research (AACR)
2023-Now	Society for Melanoma Research (SMR)
2024-Now	International Society for Stem Cell Research (ISSCR)

Seminar/Symposium Attended

- The 20th International Congress of the Society for Melanoma Research, Philadelphia, November 6-9, 2023. (**Oral presentation** in pre-conference trainee session and **poster presentation** in the congress)
- Department of Surgery Research Day, Miller school of Medicine, University of Miami, 5th May 2022. (**Oral presentation**)
- Graduate + Postdoctoral Research Symposium, University of Miami, April 1st, 2022. (**Oral presentation**)
- AACR symposium "2022 Evolutionary Dynamics in Carcinogenesis and Response to Therapy", Tampa, Florida, USA from 14th-17th March 2022
- Biomedical Postdoctoral Council (BPC) Symposium 2021 on 28th-29th January 2021 (Virtual) in University of Pennsylvania, Philadelphia. (**Poster presentation**)
- The New York Academy of Sciences Webinar: Systemic Effects of Metastatic Cancer (Virtual) on October, 2020.
- Cancer immunology works in progress and journal club (CI WIP), 28th February 2020 at Hill Pavilion, PennVet, University of Pennsylvania. (**Presented**)
- 'Penn Cancer Research (PCR) Postdoctoral Symposium' on 19th November 2019 at Abramson Family Cancer Research Institute (AFCRI), University of Pennsylvania.
- 45th Annual ECTS Congress, 2018 conducted by European Calcified Tissue Society (ECTS) on 26th-30th May 2018 in Valencia, Spain. (**Poster presentation**)
- Symposium on 'Medical writing for non-medical writers' at CSIR-CDRI, Lucknow from 22nd and 23rd February 2018.
- 6th and 7th International Symposium on 'Current trends in Drug discovery and Development' (CTDDR-2016 and CTDDR-2019) at CSIR-Central Drug Research Institute, Lucknow (**Poster presentation**)
- Seminar on Optimization techniques for western blotting, Immunohistochemistry (IHC), Immunocytochemistry (ICC) held on 25th November 2016 at CSIR-CDRI, Lucknow by Abcam
- 6th International Conference on Stem Cells and Cancer (ICSCC-2015) held on 2nd - 5th October 2015, Pune, India

- International symposium on 'Cardiovascular Disease Prevention' held on 21st & 22nd February 2011, Annamalai University, Tamil Nadu
- UGC-SAR-DRS-Phase-I conducted national seminar on 'Drug Delivery through Nanotechnology' held on 10th & 11th March 2010, Annamalai University, Tamil Nadu
- National symposium on 'Climate Change & Marine Biodiversity (CCMB – 2010)', held on 26th February 2010, Annamalai University, Tamil Nadu

Volunteer-reviews (For peer-reviewed journals)

- BBA molecular cell research (Elsevier)
- Cancers (MDPI)
- International Journal of Molecular Sciences (MDPI)
- Cells (MDPI)

Student trainees

- Natalie Agostini
- E. Damilola Fapohunda
- Rachel Kutler, Undergraduate
- Megan Reilly, Vet graduate student
- Kara Murphy, Undergraduate
- Shivani Pitale, Postgraduate
- Mousumi Borah, Undergraduate
- M. Mohanapriya, Undergraduate

Skills

- Capability of prioritizing projects and multitasking if needed, adaptability and diversity in the types of projects worked on. Work independently or in collaboration.